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EXAMINER

NGUYEN, HAIL

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

1 RECORD OF ORAL HEARING
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3 UNITED STATES PATENT AND TRADEMARK OFFICE
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5
6 BEFORE THE BOARD OF PATENT APPEALS
7 AND INTERFERENCES
8

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10 *Ex parte* SUNDEEP CHAUHAN
11

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13 Appeal 2009-003915
14 Application 10/625,386
15 Technology Center 2800
16

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18 Oral Hearing Held: August 4, 2009
19

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21 Before JOSEPH F. RUGGIERO, ROBERT E. NAPPI,
22 and CARL W. WHITEHEAD, JR., *Administrative Patent Judges*.
23

24 ON BEHALF OF THE APPELLANT:
25

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33 The above-entitled matter came on for hearing on Tuesday,
34 August 4, 2009, commencing at 1:51p.m., at the U.S. Patent and Trademark
35 Office, 600 Dulany Street, Alexandria, Virginia, before Victoria L. Wilson,
36 Notary Public.
37

1 THE USHER: Calendar number 11. Appeal number 2009-3915.

2 Mr. McCarthy.

3 JUDGE RUGGIERO: Good afternoon.

4 MR. McCARTHY: If it please the Board, I'm Mick McCarthy from
5 Oklahoma City here on behalf of Appellant this afternoon. Appreciate the
6 opportunity.

7 You know, in most cases, at the end of prosecution, we wind up with
8 some very clearly defined issues for appeal. Unfortunately, that's not the
9 case in this -- in this appeal today.

10 I want to -- would like to spend just a few minutes touching on the
11 high points of the points that we have made as to why we believe the Office
12 has not substantiated prima facie anticipation but then leave the balance of
13 the time open to the Board for -- I have come halfway across the country
14 interested to hear what may be potentially different spin you might have on
15 the cited reference to potentially stave off some different reasoning and
16 affirm on the same reference. And so let's review quickly what Staszewski
17 discloses.

18 Figure 2 of Staszewski shows a phase detector with a time to digital
19 converter 201 and Staszewski discloses that this time to digital converter
20 expresses the time difference between the reference signal and the clock
21 signal in terms of a digital word, and then in figs 5 and 6, it shows the details
22 of how that time to digital converter works.

23 And particularly I want to focus on figure 6. This is a copy of the
24 marked up figure 6 that's in my Appeal Brief.

25 And so the way Staszewski works is the time to digital converter
26 creates this digital word 604 and then, according to the Office's rationale,

1 from this digital word 604, the system is supposed to be able to identify the
2 transition location.

3 So I've got to ask you, can you, given -- I have covered up the -- the
4 reference transition itself, so can you from this signal, from this digital word,
5 tell where the transition is. And the answer is no. The answer is, as we
6 showed up in the marked-up version of this figure in the Appeal Brief, for
7 this digital word 604 value or this signal, there are actually two different
8 bands of locations that that trans -- that correspond to a transition in those
9 two bands.

10 That -- that value for the digital word could be anywhere within this
11 band before the clock pulse, it could be anywhere in this band after the clock
12 pulse and for that reason --

13 JUDGE NAPPI: Counsel, is that present in any location that you have
14 to rely on a reference point? Any kind of location, isn't that going to have to
15 have a reference point? If I give you a location, you need to know where
16 you are starting from to get to the location, don't you?

17 MR. McCARTHY: I agree.

18 JUDGE NAPPI: Okay. So if the reference point is the rising edge of
19 the clock signal, then you discretely know where the location is, don't you?

20 MR. McCARTHY: Well, Staszewski --

21 JUDGE NAPPI: Your example there, you have two.

22 MR. McCARTHY: Staszewski certainly doesn't disclose that.

23 JUDGE NAPPI: Well, Staszewski doesn't disclose your example
24 right there either.

1 MR. McCARTHY: Staszewski refers to this digital word as nothing
2 more than a phase reference or a timing reference. The Office is trying to
3 broaden that to be a location signal.

4 JUDGE NAPPI: With reference to looking at the rising edge.

5 MR. McCARTHY: Now, agreed, if there were some kind of
6 reference to the rising of the clock, then it might be but think about this. If
7 this is, in fact, a transition location signal, then this same value has -- then
8 this location must be the same location as this location because they have the
9 same transition.

10 JUDGE NAPPI: You are talking location and time, aren't you? This
11 is not a physical location of where the signal is. This is a location in time?

12 MR. McCARTHY: It is a time progression, yes. But it is -- but it is --

13 JUDGE NAPPI: So we're talking --

14 MR. McCARTHY: -- with respect to --

15 JUDGE NAPPI: -- rising edge.

16 MR. McCARTHY: -- with respect to a clock pulse, you will agree, it
17 can be before the rising edge or it can be after the falling edge; okay?

18 JUDGE NAPPI: It seems to me it starts with the rising edge and that's
19 what he is discussing when he is discussing figures 3 and 4, which he says
20 figure 6 is a further embodiment of.

21 MR. McCARTHY: Okay.

22 JUDGE NAPPI: Figures 3 and 4 of -- I can't pronounce the name.

23 MR. McCARTHY: Staszewski?

24 JUDGE NAPPI: Yeah. Isn't figures 3 and 4 showing a position and
25 figure 6 just a further clarification of that?

1 MR. McCARTHY: As I understand, figs 3 and 4 are showing the
2 calculation of the rising time delay and the falling time delay in order to
3 calculate the time -- time to digital calculations of the rise and fall and that's
4 how they calculate the digital word 604.

5 JUDGE NAPPI: My understanding is figures 3 and 4, they were an
6 embodiment, that there were some deficiencies and figure 6 was a further
7 clarification of the embodiment.

8 Because if you notice in figure 3, delta T sub R is smaller than delta T
9 sub F. In figure 4, delta T sub F is smaller than delta T sub R and he says
10 that causes some problem so he has come up with the embodiment in figure
11 6 which accounts for the fact that one may be longer than the other.

12 MR. McCARTHY: Well, this is good. So your point is that
13 Staszewski clearly discloses that everything is based off the rising edge of
14 the clock signal?

15 JUDGE NAPPI: That's my understanding from reading what the
16 Examiner said and reading this reference. And I guess my question really
17 comes to why is that an improper reading? Because I didn't catch why that
18 would be improper from your arguments. Or is your argument that this isn't
19 a position signal?

20 That was the other thing that I wasn't fully clear about. You had said
21 that that is a timing signal, not a position signal.

22 MR. McCARTHY: Well --

23 JUDGE NAPPI: But you just said this is position in time.

24 MR. McCARTHY: Certainly it is a sequence of timing signals but --
25 but, then again, it is possible to have the same digital word value both before
26 and after the rising edge of the clock signal and so that just does not seem

1 reasonable that you would have two different position values with respect to
2 the clock signal have the same value.

3 I mean it is clear -- I think it is very clear that we are stretching the
4 disclosure. I think you will at least give me that much. Staszewski
5 consistently calls that digital word either a phase -- phase difference signal
6 or a timing difference signal. What I am -- what we are claiming is a
7 transition location signal.

8 JUDGE NAPPI: Is there a difference between a location signal and
9 position signal?

10 MR. McCARTHY: No. The location signal is with respect to a
11 reference and the location is either before or after the rising edge of the
12 clock signal. Staszewski clearly says that those two locations can have the
13 same value and so that is unreasonable to call those two -- that same value
14 two different locations or two different positions.

15 JUDGE NAPPI: I don't think Staszewski teaches that the two
16 locations -- it teaches that at different points in time you can have the same
17 value for the position -- at different points in time you can have the same
18 value.

19 MR. McCARTHY: You don't think it teaches that?

20 JUDGE NAPPI: It does teach that but it doesn't teach that the -- let
21 me rephrase that. I didn't see what the reference taught. What you have
22
23 added is the first band there on the left. I saw no discussion in reference of
24 that being considered position signal.

1 MR. McCARTHY: Exactly. And if the reference had contemplated
2 some sort of location, identifying the location of this transition, then it
3 certainly would have disclosed that whatever our reference point is.

4 In fact, Staszewski goes on at great length in columns -- column 6
5 towards the bottom half beginning around line 44 to the end of the page talks
6 about the problems that it has when it gets into is this a negative phase error
7 or is this a positive phase error, where exactly is that shift with respect to
8 location or position.

9 We don't know. We don't solve that problem. We do solve that
10 problem. We just think we are entitled to it in terms of a transition location
11 signal.

12 JUDGE NAPPI: So what you are really saying is the difference
13 between your reference and Staszewski -- I'm sorry -- the difference between
14 your claim and the reference is whether or not it teaches lagging or leading
15 because you are saying Staszewski differentiates between the two?

16 MR. McCARTHY: No, I don't think lagging or leading is the point at
17 all. The point is that we -- we have -- we lay claim to an invention that is
18 improvement on the old way, Staszewski's way, of generating a phase error.
19 We generate a phase error from a transition location signal.

20 We first -- Staszewski goes straight to a phase error. We first identify
21 transition location and from that transition location, then we generate our
22 phase error. And so we don't -- we don't have this battle between positive
23 and negative. We are precisely honed in on where that location is. We are
24 not concerned about leading or lagging at all.

25 JUDGE NAPPI: So what you are saying is he doesn't create a phase
26 error signal or at least calculates it differently?

1 MR. McCARTHY: Staszewski's digital word is the phase error
2 signal. It is the timing difference.

3 JUDGE NAPPI: And --

4 MR. McCARTHY: We are generating a phase error from a timing
5 signal, from a transition location signal. Our claims -- all of our claims are
6 reciting a phase frequency comparator that generates or maps to a phase
7 error in response to a transition location signal. Where is the transition
8 location signal in Staszewski?

9 JUDGE NAPPI: I believe that's what the Examiner has been saying
10 is --

11 MR. McCARTHY: Well, he just points to the 604. I mean I don't see
12 any analysis other than -- he just says 604, that's it. He wasn't responsive to
13 our arguments that it wasn't 604.

14 JUDGE NAPPI: Well, isn't that -- that's not a signal?

15 MR. McCARTHY: It is not. It can't be because 604 -- that's 604.
16 That's the digital word 604. There is two different locations that that
17 transition can exist for that one signal. So it can't be.

18 JUDGE NAPPI: So bear with me for a second. Let's go with we have
19 reference point from the rising edge. Why isn't that a location?

20 MR. McCARTHY: Beyond the fact that it is beyond the teaching of
21 the cited reference? It would be a good reference.

22 JUDGE NAPPI: So if it was going from the rising edge, then you
23 would concede that it is the location signal?

24 MR. McCARTHY: If Staszewski -- let me be careful here because
25 we are splitting hairs and I don't have any to spare.

1 If Staszewski said that everything is referenced from the rising edge
2 and the digital -- and the digital word 604 indicates the timing difference,
3 because it doesn't say location, if it -- that it will indicate the timing
4 difference or the phase difference with respect to the leading edge, then I
5 think you have a reasonable argument there that it, in effect, is a position or
6 a location, yes, but I don't think Staszewski does that.

7 JUDGE NAPPI: We have beaten this one enough.

8 MR. McCARTHY: No, really, I appreciate the dialogue, I really do.

9 Let's see. Staszewski never discloses that it is a phase signal and we
10 have talked about the fact that there are two locations.

11 The only other point that I want to make about claims 1 and 20, which
12 are focused on the transition location signal, is that the Office makes a point
13 that we never quite understood that somehow Staszewski teaches these
14 transition location signals occurring in each cycle but I just want to make the
15 point that -- as we raised in the Brief, that the claims recite a transition
16 location signal, not transition locations, plural, as if it were repetitive.

17 What we are laying claim to is the -- the transition location signal.
18 Okay.

19 Moving to claim 10, the Office read Staszewski's norm circuitry onto
20 the claimed or encoding circuitry of claim 10. The Office relied on the
21 dictionary definition of the word encoder as something that converts an input
22 digital signal into its equivalent binary code. We have pointed out, I just
23 want to emphasize, that the passage of Staszewski that the Office cites for its
24 rationale neither mentions norm, the norm circuit, nor any other circuitry
25 that converts a digital signal to a binary equivalent.

1 So -- so by the Office's own admission, the norm circuit does not,
2 quote -- is not encoding circuitry on its own definition because there is no
3 evidence that the norm circuit of Staszewski, quote, "converts input digital
4 signals into its equivalent binary code."

5 And then, finally, where Staszewski does address or does disclose its
6 norm circuit, we have pointed out that the norm circuit clearly to the skilled
7 artisan is something other than a typical encoding type circuit because it
8 makes quantitative, not qualitative, changes like you would see in an
9 encoder.

10 The Staszewski norm circuit actually mathematically divides the error
11 by the clock period in order to derive the fractional error which it adds then
12 to the integer error and so the -- the point that brings us to appeal is that we
13 just simply do not believe that the Office has substantiated a prima facie
14 anticipation but, obviously, the issue now on appeal is anticipation generally.

15 So we are here to hear whether the Board has another read on
16 Staszewski or maybe we just missed the boat on the Office's position.

17 JUDGE NAPPI: I have nothing further.

18 JUDGE RUGGIERO: Any other questions?

19 JUDGE WHITEHEAD: No.

20 JUDGE RUGGIERO: Okay. We have nothing else.

21 MR. McCARTHY: Okay. Thank you very much for your time.

22 (Whereupon, the proceedings at 2:06 p.m. were concluded.)